

# A Note on the Mantids and Tettigonids in the collection of the Bombay Natural History Society

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While rearranging the insect collections of the Bombay Natural History Society, a few boxes containing Orthopteran insects were found divided into their families, of which two, the Acridids and Tettigonids, were largely identified specifically; the other families, Blattidae, Mantidae, Phasmidae, and Gryllidae, had been left alone. A search for relevant literature revealed that, except for Kirby's FAUNA OF BRITISH INDIA on Acridiidae (1914) and his A SYNONYMIC CATALOGUE OF ORTHOPTERA in 3 volumes (1904-1910), no consolidated taxonomic work is available. In subsequent years a large number of species and genera have been established and described in scattered periodicals and journals, mostly in languages other than English. Upon a reference being made to the British Museum (Natural History), London, Dr. David R. Ragge of the Entomology Department replied: 'The Phasmataidae and Blattidae would be impossible to identify here at present and it would be better for you to retain the Gryllidae until the publication of Chopard's monograph of the oriental members of this group'. He, however, offered to work through the Tettigoniidae and Mantidae though he thought that identification to the species would doubtless not be possible in every case. These two groups of insects were, therefore, sent to London and we are thankful to Dr. Ragge for their identification. Though no new species were recorded, the locality in many cases adds to the known range and is published here for the use of future workers. The species are arranged family-wise in the order now in use in the British Museum and are listed below with such remarks as add to what has been already recorded about them.

The following persons contributed to the collection of these insects:

(1) N. B. Kinnear, (2) C. McCann, (3) T. R. Bell, (4) P. F. Gomes, (5) E. Blatter, (6) S. H. Prater, (7) N. A. Baptista, (8) R. Newcome, (9) B. S. Carter, (10) D.G. Cameron, (11) F.P. Connor, (12) J. E. B. Hotson, (13) N. E. Standage, (14) A. G. Sheikh, (15) G. C. Shortridge, (16) C. E. Southon, (17) W. S. Millard, (18) C. H. Dracott, and (19) Saunders,

## MANTIDS

The total number of species of Indian<sup>1</sup> Mantids according to Kirby's CATALOGUE in 1904 was 82. After its publication, as far as could be gathered from *Zoological Records* and other publications in the Library of the Society, about 55 additional Indian species have been described by various systematists in different journals making a total of 137 Indian species. Of these, 28 species from India and six more from neighbouring areas have been identified in our collection. The latter are listed only for record. More than half of these species, i.e. 19 species, belong to the family Mantidae which is the biggest family of this sub-order. The other families are represented by one to four species each, while we have no specimens of the family Orthoderidae.

Order : DICTYOPTERA

Sub-Order : MANTODAE

Family : AMORPHOSCELIDAE

1. *Amorphoscelis* sp. 1 ♂ : collected at Andheri (Bombay) in 1941. Two species of this genus have been recorded before, *A. annulicornis* Stal. in Assam (23)<sup>2</sup> and on the Indian mainland (17), and *A. indica* G.T. at Dehra Dun (17).

Family : EREMIAPHILIDAE

2. *Humbertiella* sp. 8 ♂♂, 7 ♀♀ : collected from Nasik, Bombay, Panchgani, Belgaum, Castle Rock, Gersoppa, and Mercara. Previous records : *H. indica* Sauss. in India, *H. septentrionum* Wood-Mason in Assam and Travancore (7), *H. ceylonica* Sauss. at Haldwani in the United Provinces, and Chinchchawatni in west Punjab (18), and *H. similis* G. T. in Nepal (5). *H. nigrospinosa* Sjo. is mentioned as Indian in *Ark. Zool.* 21A, No. 32, 1930.

3. *Didymocorypha lanceolata* (Fab.) 1 ♂, 1 ♀, 1 nymph : collected in Karachi in 1903. This species was described as *D. ensifera* W.-M. (23) and is recorded from Tin Phar on the eastern flanks of the Rajmahal Hills, Bengal ; Ceylon ; and Kulu and Kangra in the NW. Himalayas. It is also known from Dehra Dun and Raipur in the Central Provinces (now Madhya Pradesh) (18).

4. *Dysaules himalayanus* Wood-Mason 2 ♂♂ : collected at Andheri (Bombay) in 1934 and Khandala in 1941. It was earlier descri-

<sup>1</sup> Including Pakistan, but excluding Burma and Ceylon.

<sup>2</sup> The numbers within brackets indicate references at the end of this paper.

bed under the specific name *longicollis* and the range was given as the NW. Himalayas, Quetta, Kulu, Kangra, and Bengal (23). Other distribution shown is NW. India and Quetta (7), Dehra Dun and Haldwani in the United Provinces (18), and Rahtagaon and Hoshangabad in the Central Provinces (19).

Family: MANTIDAE

5. *Hierodula tenuidentata* Sauss. 3 ♂♂, 7 ♀♀: collected in Bombay and Panchgani in 1913, 1915, 1926, and 1932-33. This species has been collected in Malabar (India) and Borneo (7) under the name *Sphodromantis tenuidentata* Sauss.

6. *Hierodula coarctata* Sauss. 1 ♂: collected in Bombay in 1911. Its habitat has been recorded as India and Australia (7). Lefroy notes it as a familiar insect all over India (6).

7. *Hierodula unimaculata* (Oliver) 3 ♂♂: collected in Bombay-Salsette in 1910, 1926, and 1940. This species has been noted from Coromandel, Bombay; and from Tonkin (7) and Ceylon (21).

8. *Rhombodera woodmasoni* Werner 1 ♀: collected in 1916 at Nagarcoil, Madras State. Previously this was recorded at Nilambur, Kerala State (17).

9. *Mantis religiosa* L. Two specimens one collected in 1916 at Amara, Mesopotamia, the other in India (locality not stated). Its habitat is given as southern and central Europe, NW. Asia, and N. Africa (7).

10. *Acromantis* sp. Only one specimen, without any data. Previously a species of this genus, *A. oligoneura* Haan, has been recorded in India (7).

11. *Deiphobe infuscata* (Sauss.) 3 ♂♂, 1 ♀: collected in 1910 at Nagargali and Yellapur of Bombay Karnatak (now Mysore State). Previously recorded from Balaghat in the Central Provinces (now Madhya Pradesh) (18) and from Mussoorie and Dehra Dun in the United Provinces (19).

12. *Deiphobe indica* Giglio-Tos 1 ♂: collected at Nirwan (Kutch) 1935. Giglio-Tos in *Bull. Soc. ent. Ital.* 47 (1916) does not give its habitat. Species of this genus, however, have been noted all over India.

13. *Deiphobe* sp. 3 specimens: one collected at Kotagiri in the Nilgiris in 1916, another in Mesopotamia in 1916, and the third at Panchgani in 1932-33.

14. *Schizocephalus bicornis* (L.) 2 ♂♂: collected in 1915 and 1935 at Andheri (Bombay). Previously recorded from Africa, India, and China (7).

15. *Ambivia popa* Stal. 1 ♂, 2 ♀♀: collected in 1938 at Andheri and in the Naga Hills in 1941. Its habitat is given as India (7). Werner collected all his specimens from Dehra Dun (18 and 19).

16. *Phyllothelys westwoodi* (Wood-Mason) 1 ♀: collected in 1936 at Andheri (Bombay). Previously recorded from Naga Hills and Bhutan (7), and from Dehra Dun (17).

17. *Amantis* sp. Three specimens, two collected in 1934 at Andheri (Bombay) and one in Coorg (S. India) in 1916. Two species of this genus *A. subirina* G. T. from Assam and *A. indica* G. T. from India have been previously mentioned (5). Another species, *A. aliena* Beier, is recorded from Tenasserim (Burma) (2).

18. *Elmantis trincomaliae* (Sauss.) 1 ♂: collected at Deolali in 1915. It was previously noted only in Ceylon (5).

19. *Leptomantella* sp. There is only one specimen without any data. The generic name *Leptomantis* G. T. has been changed to *Leptomantella* (15), as the former was preoccupied. Two species of *Leptomantis* have been recorded in India before, *L. indica* G. T. in Assam (16) and *L. parva* Werner at Dehra Dun (18).

#### Family: HYMENOPTIDAE

20. *Ephistiasula pictipes* (Wood-Mason) 3 ♂♂: collected at Santa Cruz in 1912 and at Andheri (Bombay) in 1936. It was previously recorded from Dehra Dun (19).

21. *Creoboter gemmatus* (Stoll) 1 ♂, 3 ♀♀: collected in N. Kanara in 1928 and at Santa Cruz (Bombay) in 1912. Its habitat is recorded as America and Java (7). Species of *Creoboter* found in India are: *C. elongata* Beier in Sikkim, *C. arbana* Fab. in Dehra Dun (United Provinces) (10), and *C. apicalis* Sauss. in Mangalore (old Madras Presidency), and Bengal (17 and 19).

22. *Hymenopus coronatus* (Oliver) 1 ♀: collected at Chippendale, Simla, in 1909. Its habitat is given as Assam, Moluccas, and Sunda Islands under the name *H. bicornis* W.-M. (21). It is also noted from Sikkim, Java, and Sarawak (1).

23. *Evantissa pulchra* (Fab.) (= *Antissa pulchra* F.) 1 ♂, 1 ♀: collected in Karachi in 1905. The habitat of this species is recorded as: 'India, Ceylon. (Cape, *errore* ?)' (7). There is a reference by A. P. Mathew to this species in Trivandrum (9).

## Family: TOXODERIDAE

24. *Paradanuria* sp. 2 ♂♂: one of these was collected at Bandra (Bombay) in 1912 and the other at Andheri (Bombay) in 1939. Its distribution is recorded as Indian sub-region of the Oriental region (24). The only Indian species, known as *P. orientalis* W.-M., was collected from Bangalore, Mysore (24).

## Family: VATIDAE

25. *Aethalochroa ashmoliana* (Westwood) 4 ♂♂, 1 ♀: two collected in Bombay once in 1912 and at Andheri again in 1937 and three at Panchgani in 1932. It is recorded from Bombay and N. India (7). It has also been recorded from Madras and Ceylon (20) and from Bengal, United Provinces, etc. (16, 21).

## Family: EMPUSIDAE

26. *Gongylus gongyloides* (L.) 2 ♂♂, 1 ♀: one collected in Thana Hills in 1928, the second at Mt. Abu in 1940, and the third at Bhyander in Thana District in 1937. Its habitat is given as India and Ceylon (7).

27. *Empusa pauperata* (Fab.) 1 ♂: collected at Nasik in 1914. Its habitat is given as India and Ceylon (7).

28. *Blepharopsis mendica* (Fab.) 2 ♂♂, 1 ♀: two collected in Karachi in 1905 and 1907 and the third at Amara, Mesopotamia, in 1916. Its habitat is known to be N. Africa and west Asia (7 and 12).

Along with the 28 species enumerated above, there are six more collected from the neighbouring countries. They are:

## EREMIAPHILIDAE

- (1) *Eremiaphila cerisyi* Lef.: collected at Muscat in 1918

## MANTIDAE

- (2) *Rhombodera valida* Burm.: collected at Azahar, Malacca, in 1913  
 (3) *Fischeria baetica* Ramb. (damaged to some extent): collected at Mesopotamia in 1916  
 (4) *Deroplatys truncata* (Guerin): collected at Singapore in 1913  
 (5) *Phyllocrania paradoxa* Burm.: collected in Nairobi (Kenya).

## EMPUSIDAE

- (6) *Empusa fasciata* Brull.: collected at Abadeh (Persia) in 1916.

## TETTIGONIDS — LONGHORNED GRASSHOPPERS

Great strides have been made in the study of Tettigoniidae in the world but India has remained far behind. Kirby (8) mentioned 3161 species in his catalogue of Tettigoniidae of the world; of these only 150, less than 5% of the total, were Indian. Since then the total number has risen to more than 4000, while only about 29 new species have been added to the family in India, raising our total to 179. We have in our collection only a few, as catalogued below. All of them were identified by B. P. Uvarov. They are also arranged below family-wise as in the case of Mantids. The non-Indian species have been listed only for record.

## Order ORTHOPTERA

## Family: TETTIGONIIDAE — LOCUSTIDAE

## Sub-family: CONOCEPHALLINAE

1. **Conocephallus indicus** Redt. Three specimens: collected one each at Belgaum in 1910, Berars in 1913, and Panchgani in 1932. Its habitat is recorded as India, China, Java, etc. (8).

## Sub-family: PSEUDOPHYLLINAE

2. **Morsimus carinatus** Walk. Two specimens: collected in Bombay in 1918. Its habitat is mentioned as India and Ceylon (8). Uvarov has recorded its habitat as Bombay and criticises Kirby's nomenclature in this regard (13). He writes: 'Kirby in his CATALOGUE has quite incorrectly regarded *carinatus* Walk. as distinct from *curvifrons* Walk. since the types of both species are undoubtedly conspecific; on the other hand he was quite wrong in synonymising *A. gracile* Walk. and *A. oculatum* Sauss. & Pict. with *M. carinatus*.' The generic name *Morsimus* was changed recently to *Paramorsimus* (4).

3. **Sathrophyllia rugosa** Linn. Eight specimens: collected in Andheri (1908), Coorg (1920), Nasik (1938), and Deolali (1940). Its habitat is mentioned as India and Ceylon (8).

4. **Sanna imperialis** Wh. Four specimens: collected in Sikkim in 1912-1914. Its habitat is recorded as N. India (8).

5. **Callimenellus opacus** Br. Two specimens: collected at Khandal in 1940. The habitat of this species is recorded as Tenasserim (8). Another species of this genus, *C. apterus* Beier, however, is recorded as Indian (3).

## Sub-family : MECOPODINAE

6. *Mecopoda elongata* Linn. Eight specimens : collected in Bombay in 1936 and in Goa in 1938. Its habitat is recorded as China, Japan, India, Malacca, Malaya, Moluccas, and Australia (8). This is an extremely common grasshopper round about Bombay, appearing every year at the end of October and hovering round the street lights at nightfall.

## Sub-family : PHANEROPTERINAE

7. *Ducetia japonica* Stall. Five specimens : collected at Nasik in 1913 and Bombay in 1938 and 1939. There is one specimen without any data and identified by B. P. Uvarov as *Ducetia thymifolia* Fab. which is a synonym. Its habitat is known as India, Ceylon, Japan, Java, Borneo, the Philippines, Cambodia, and Australia (8).

8. *Trigonocorypha unicolor* Stall. Eight specimens : collected in Bombay in 1940. India and Java are mentioned as its habitat (8).

9. *Elimaea securigera* Brunn. Three specimens : collected at Madurai in 1917 and Bombay in 1938. Its habitat as noted are N. India and Ceylon (8).

Two more species were collected from outside India. Both belong to the sub-family Decticinae. They are :

- (1) *Decticus albifrons* Fab. : collected in Mesopotamia in 1916.
- (2) *Decticus assimilis* Fieb. : collected at Bandamir in 1920.

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*Note.* No direct access could be had to the references marked with an asterisk. They have been noted either through their reviews or from quotations from other sources.